

REMARKS

I. Status of the Application

Claims 19-70 are presently pending in the application. Claims 37-70 are allowed. Claims 19, 23-26, 30-36 stand rejected under 35 USC § 103(a) as being obvious over U.S. Patent No. 4,984,959 to Kato in view of U.S. Patent No. 5,982,127 to Matsubara et al. Claims 20, 27 and 28 stand rejected under 35 USC § 103(a) as being obvious over Kato in view of Matsubara and U.S. Patent No. 5,661,387 to Stadele et al. Claims 21-22, 29 are indicated as being allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

The foregoing amendments in view of the following remarks are believed to place all pending claims of this application in condition for allowance. Accordingly, reconsideration of the application and allowance of claims 19-70 as now submitted is respectfully requested.

Applicant thanks the Examiner for the courtesies extended to Greg Cohan in the telephonic interview conducted on March 27, 2003.

II. Claims 19, 23-26, and 30-36 Are Nonobvious Over Kato and Matsubara

Claims 19, 23-26, 30-36 stand rejected under 35 USC § 103(a) as being obvious over U.S. Patent No. 4,984,959 to Kato in view of U.S. Patent No. 5,982,127 to Matsubara et al. This rejection is respectfully traversed.

Greg Cohan presented the following arguments in the interview conducted on March 27, 2003, at which time the Examiner indicated that favorable consideration would be given.

Kato discloses a robotic arm having a body 1, a trunk 2, a shoulder 31a, an upper arm 31e, a forearm 51e connected to upper arm 31e by an elbow, and a wrist 51c holding a hand device 7. Motors (16a, 14a, etc.) are housed in body 1.

Matsubara discloses a robot 1 having a vertically movable mount structure 2. A balancing device A comprises a pair of springs 6 in series with a wire 7. Balancing device A is secured at one end to a bottom of robot 1 and at its other end to a bracket 9, which moves vertically with mount structure 2. A first operating arm 10 is rotatably supported by mount structure 2. A second operating arm 14 is rotatably supported at one end by first operating arm 10. A rotation shaft 16 is mounted on the other end of second operating arm 14.

Neither Kato nor Matsubara, alone or in combination, discloses or makes obvious a manipulator comprising a foot part and a number of members, with a second member rotatable about an elbow axis relative to a first member, and compensating means provided in a foot part for a first member and second member which, upon **rotational** movement of the members, at least partially compensate for the moment exerted by the first member relative to the foot part and by the second member relative to the elbow axis, as required by independent claim 19.

As noted by the Examiner, Kato does not disclose a compensating means. The compensating means of Matsubara is balancing device A, which is connected at one end to a bottom of the robot and at its other end to a bracket 9, which moves with mount structure 2. The sole function of the balancing device is to balance the weight of mount structure 2 during vertical movement thereof (see, e.g., col. 1, lines 11-13, and 51-59; col. 2, lines 33-37, and 55-63; col. 3, lines 47-48; and col. 3, line 67 through col. 4, line 20). That is, the balancing device compensates for moments caused by weight only. This compensating means does not compensate for the rotational movement of operating arms 10, 14.

There is no motivation or suggestion in either Kato or Matsubara to suggest putting the compensating means taught by Matsubara, namely, a spring device that compensates solely for weight moments, in the device of Kato to compensate for the rotational movement of upper arm 31e and forearm 51e. One skilled in the art would not look to Matsubara's teachings of a spring-based weight-balancing device to compensate for the rotational movement of the operating arms of Kato.

Consequently, the claimed compensating means is not disclosed or made obvious by the combination of Kato and Matsubara, and the rejection should be withdrawn. Claims 23-26, and 30-36, each of which depends from claim 19, are believed to be allowable as well.

III. Claims 20, 27, and 28 Are Nonobvious Over Kato, Matsubara, and Stadele

Claims 20, 27, and 28 stand rejected under 35 USC § 103(a) as being obvious over Kato in view of Matsubara and U.S. Patent No. 5,661,387 to Stadele et al. This rejection is respectfully traversed.

Stadele fails to overcome the deficiencies of Kato and Matsubara noted above. Specifically, Stadele fails to disclose or make obvious compensating means provided in a footpart for a first member and second member which, upon **rotational** movement of the members, at least partially compensate for the moment exerted by the first member relative to the foot part and by the second member relative to an elbow axis, as required by independent claim 19, from which claims 20, 27 and 28 depend. Stadele simply has no compensating means. Accordingly, the rejection is improper and should be withdrawn.

IV. Claims 21-22, 29 Are Allowable in Their Present Form

Applicant thanks the Examiner for the indication that claims 21-22, 29 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Since claim 19 is believed to be allowable, as discussed above, claims 21-22, and 29, which depend from independent claim 19, are believed to be allowable in their present form.

In view of the foregoing amendments and remarks, pending claims 19-70 are believed to be allowable, and an indication to that effect from the Examiner is respectfully requested at this time. If a telephone conversation with applicant's attorney would expedite prosecution of the above-referenced application, the Examiner is urged to call the undersigned at the number below.

Please apply any required charges or credits to our Deposit Account No. 19-0733.

Respectfully submitted,

Date: _____

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for Gregory J. Cohan, Reg. No. 40,959
John P. Iwanicki, Reg. No. 34,628
BANNER & WITCOFF, LTD.
28 State Street, 28th Floor
Boston, MA 02109-1775
Telephone: (617) 720-9600